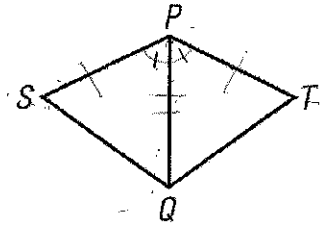




Complete each two-column proof.

1) Given: \overline{PQ} bisects $\angle SPT$; $\overline{SP} \cong \overline{TP}$

Prove: $\triangle SPQ \cong \triangle TPQ$



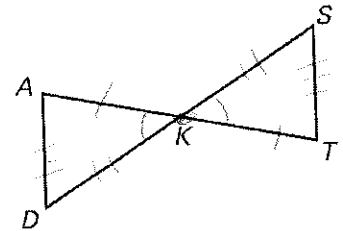
Statements

1. \overline{PQ} bisects $\angle SPT$
2. $\angle SPQ \cong \angle TPQ$
3. $\overline{SP} \cong \overline{TP}$
4. $\overline{PQ} \cong \overline{PQ}$
5. $\triangle SPQ \cong \triangle TPQ$

Reasons

1. Given
2. Definition of an Angle Bisector
3. Given
4. Reflexive
5. SAS

2) Given: K is the midpoint of \overline{AT} ; K is the midpoint of \overline{DS} ; $\overline{AD} \cong \overline{TS}$
Prove: $\triangle ADK \cong \triangle TSK$



Statements

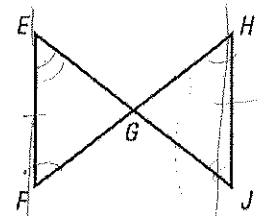
1. K is the midpoint of \overline{AT}
2. $\overline{AK} \cong \overline{TK}$
3. K is the midpoint of \overline{DS}
4. $\overline{DK} \cong \overline{SK}$
5. $\overline{AD} \cong \overline{TS}$
6. $\triangle ADK \cong \triangle TSK$

Reasons

1. Given
2. Definition of a Midpoint
3. Given
4. Defn. of Midpoint
5. Given
6. SSS

3) Given: $\overline{EF} \cong \overline{JH}$; $\overline{EF} \parallel \overline{JH}$

Prove: $\triangle EFG \cong \triangle JHG$



Statements

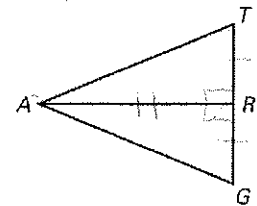
1. $\overline{EF} \cong \overline{JH}$; $\overline{EF} \parallel \overline{JH}$
2. $\angle H \cong \angle F$, $\angle E \cong \angle J$
3. $\triangle EFG \cong \triangle JHG$

Reasons

1. Given
2. Alternate Interior Angles Theorem
3. ASA

4) Given: $\overline{AR} \perp \overline{TG}$; $\overline{GR} \cong \overline{TR}$

Prove: $\triangle AGR \cong \triangle ATR$



Statements

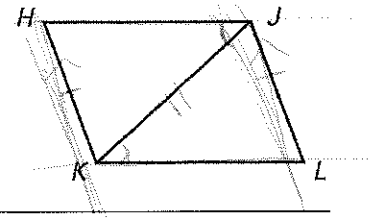
1. $\overline{AR} \perp \overline{TG}$ $\angle ARG$ and $\angle ATR$ are rt. angles.
2. $\angle ARG \cong \angle ATR$
3. $\overline{GR} \cong \overline{TR}$
4. $\overline{AR} \cong \overline{AR}$
5. $\triangle AGR \cong \triangle ATR$

Reasons

1. Given
2. Definition of Perpendicular
3. Right Angle Congruence Theorem
4. Given
5. Reflexive
6. SAS

5) Given: $\overline{HK} \cong \overline{LJ}$; $\overline{HK} \parallel \overline{LJ}$

Prove: $\triangle HJK \cong \triangle LKJ$



Statements

1. $\overline{HK} \cong \overline{LJ}$; $\overline{HK} \parallel \overline{LJ}$

2. $\angle HJK \cong \angle LKJ$

3. $\overline{JK} \cong \overline{JK}$

4. $\triangle HJK \cong \triangle LKJ$

Reasons

1. Given

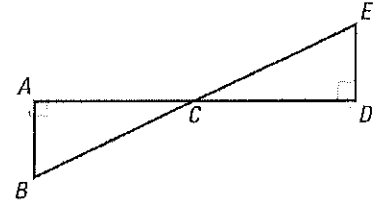
2. Alternate Interior Angles Theorem

3. Reflexive Property

4. SAS

6) Given: $\overline{AB} \perp \overline{AD}$; $\overline{DE} \perp \overline{AD}$; $\overline{BC} \cong \overline{EC}$

Prove: $\triangle ABC \cong \triangle DEC$



Statements

1. $\overline{AB} \perp \overline{AD}$; $\overline{DE} \perp \overline{AD}$

2. $\angle A$ and $\angle D$ are rt. angles.

3. $\angle A \cong \angle D$

4. $\overline{DE} \perp \overline{AD}$

5. $\angle ADE \cong \angle DEC$

6. $\triangle ABC \cong \triangle DEC$

Reasons

1. Given

2. Defn of \perp lines

3. $\angle A \cong \angle D$ Congruence Theorem

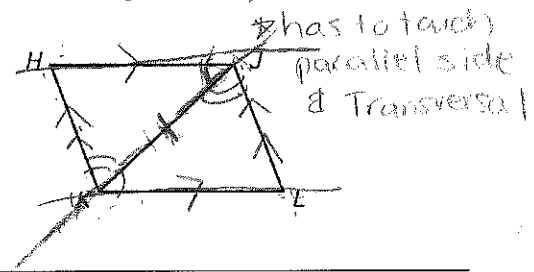
4. Given

5. vert. \angle Th.

6. AAS (SAA)

7) Given: $\overline{HJ} \parallel \overline{LK}$; $\overline{HK} \parallel \overline{LJ}$

Prove: $\triangle HJK \cong \triangle LKJ$



Statements

1. $\overline{HJ} \parallel \overline{LK}$

2. $\angle HJK \cong \angle LKJ$

3. $\overline{HK} \parallel \overline{LJ}$

4. $\angle HKJ \cong \angle LJK$

5. $\overline{KJ} \cong \overline{KJ}$

6. $\triangle HJK \cong \triangle LKJ$

Reasons

1. Given

2. Alternate Interior Angles Theorem

3. Given

4. Alt. Int. \angle 's Th.

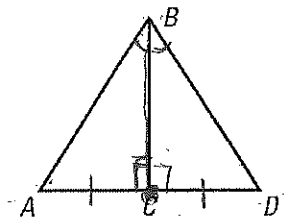
5. Reflexive

6. ASA

8) Given: \overline{BC} bisects $\angle ABD$; $\overline{BC} \perp \overline{AD}$;

Prove: $\triangle ABC \cong \triangle DBC$

C is the midpoint of \overline{AD}



Statements

1. \overline{BC} bisects $\angle ABD$

2. $\angle ABC \cong \angle DBC$

3. $\overline{BC} \perp \overline{AD}$

4. $\angle ACB$ & $\angle DCB$ are rt. \angle 's

5. $\angle ACB \cong \angle DCB$

6. C is the midpoint of \overline{AD}

7. $\overline{AC} \cong \overline{DC}$

8. $\triangle ABC \cong \triangle DBC$

Reasons

1. Given

2. Defn of bisector

3. Given

4. Definition of Perpendicular Lines

5. Rt \angle cong Th

6. Given

7. Definition of midpoint

8. AAS